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LITTLE BUG WINS BIG VICTORY

2001

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U.S. DEPARTMENT OF AGRICULTURE
Picture Story 279

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This tiny South American flea beetle, *Agasicles hydrophilia*, and millions of its kin are eating their way through alligatorweed—their natural host and the scourge of many Southern waterways (0474X552-1A).

LITTLE BUG WINS BIG VIC

It all started with about 200 of them—cardboard container to a site on the Ortega River, Florida in 1965.

Today, literally millions of these tiny, beetles (*Agasicles hygrophila*) are helping clear of strangulating alligatorweed—an into the United States by accident from Sou 1880s.

Agasicles flea beetles, a natural para have been collected at original U.S. releas River location, and relocated in nine California by entomologists of USDA's Service (ARS), personnel of the U.S. Arm and state workers engaged in aquatic we

Effectiveness of the flea beetles was il tween Lake Pontchartrain and Lake Maur northwest of New Orleans, La. Here, as ir alligatorweed was growing in large mats stems floating near the surface. So dense v places, they took on the appearance of sol weed masses are disappearing and the beginning to reopen.

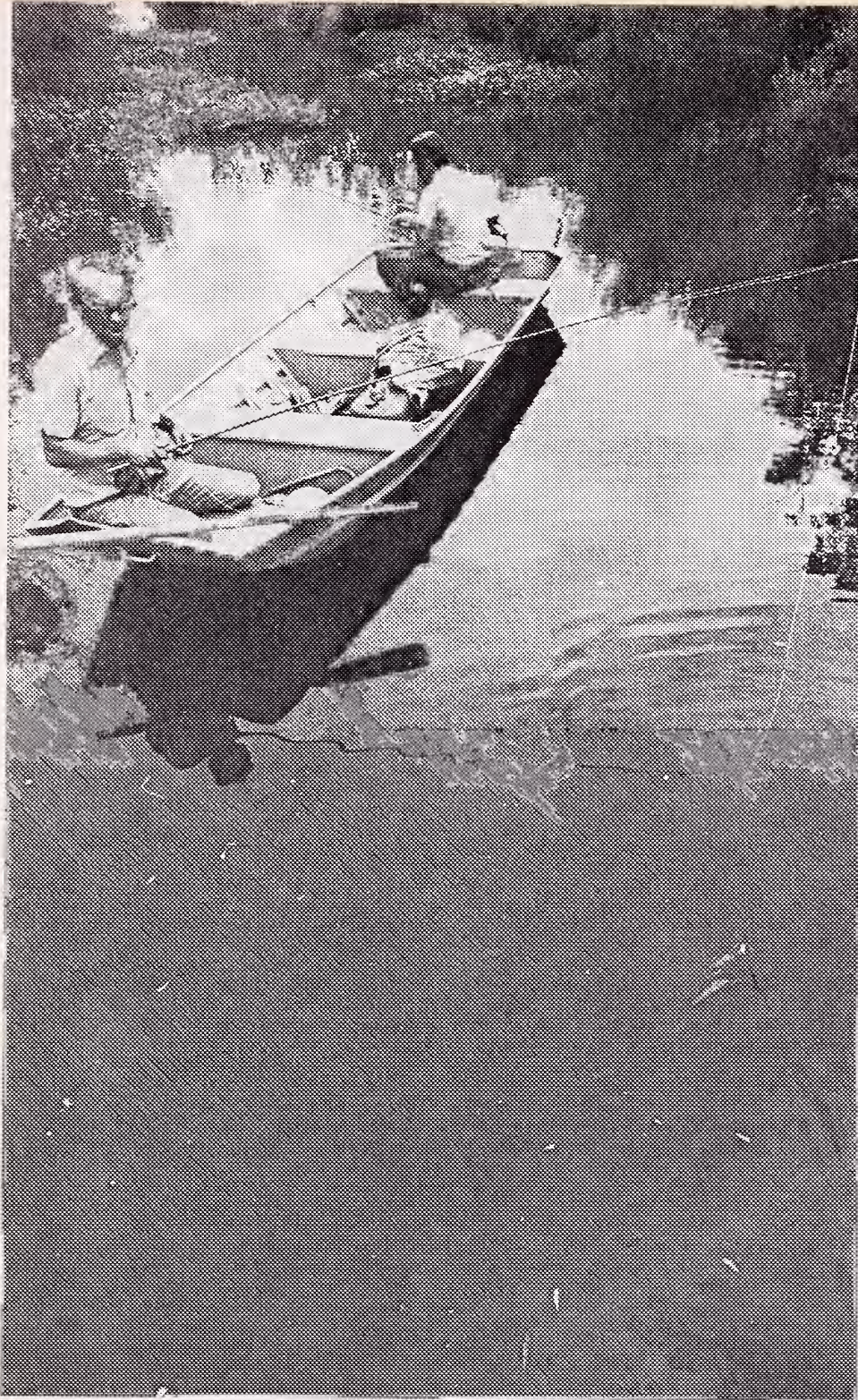
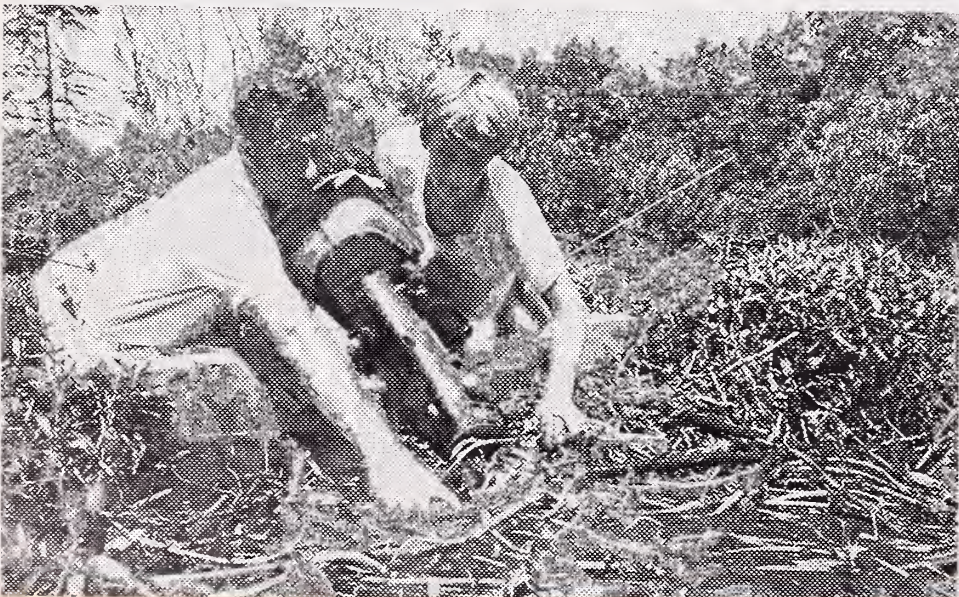
Throughout its life stages, the flea beetl weed in different ways. The adults fee females lay their eggs—1,000 or more— leaves; young larvae then feed on the ur and, as mature larvae, chew their way ir develop into adults within the stems, eat th to the leaves to start the cycle again. Dam larvae either kills the alligator weed ou making it vulnerable to disease, competi plants, or wind and wave action.

According to observations thus far, the been found in significant numbers on an time during its life cycle. Insect numbers ris the amount of alligatorweed available.

Thankfully, the beetle prefers to feed o mats which clog waterways rather than on plants growing in shallow waters or on rooted plants provide forage for livestock a stream banks against erosion.

TODAY: This bayou—or creek—near Lake Pontchartrain, Louisiana, once again runs clear and fishermen find pleasant hours thanks to the voracious appetites of millions of tiny flea beetles (0474X555-29).

BEFORE: In August 1972, before the beetles went to work, heavy mats of alligatorweed plagued fishermen in this same bayou (0872X1189-17).



LITTLE BUG WINS BIG VICTORY

It all started with about 200 of them—delivered in a pint, cardboard container to a site on the Ortega River near Jacksonville, Florida in 1965.

Today, literally millions of these tiny, South American flea beetles (*Agasicles hygrophila*) are helping to keep waterways clear of strangulating alligatorweed—an aquatic pest brought into the United States by accident from South America in the late 1880s.

Agasicles flea beetles, a natural parasite of alligatorweed, have been collected at original U.S. release sites like the Ortega River location, and relocated in nine Southern states and California by entomologists of USDA's Agricultural Research Service (ARS), personnel of the U.S. Army Corps of Engineers, and state workers engaged in aquatic weed control.

Effectiveness of the flea beetles was illustrated at a site between Lake Pontchartrain and Lake Maurepas, about 40 miles northwest of New Orleans, La. Here, as in other infested areas, alligatorweed was growing in large mats of hollow, interwoven stems floating near the surface. So dense were the mats in some places, they took on the appearance of solid land. Now the large weed masses are disappearing and the water channels are beginning to reopen.

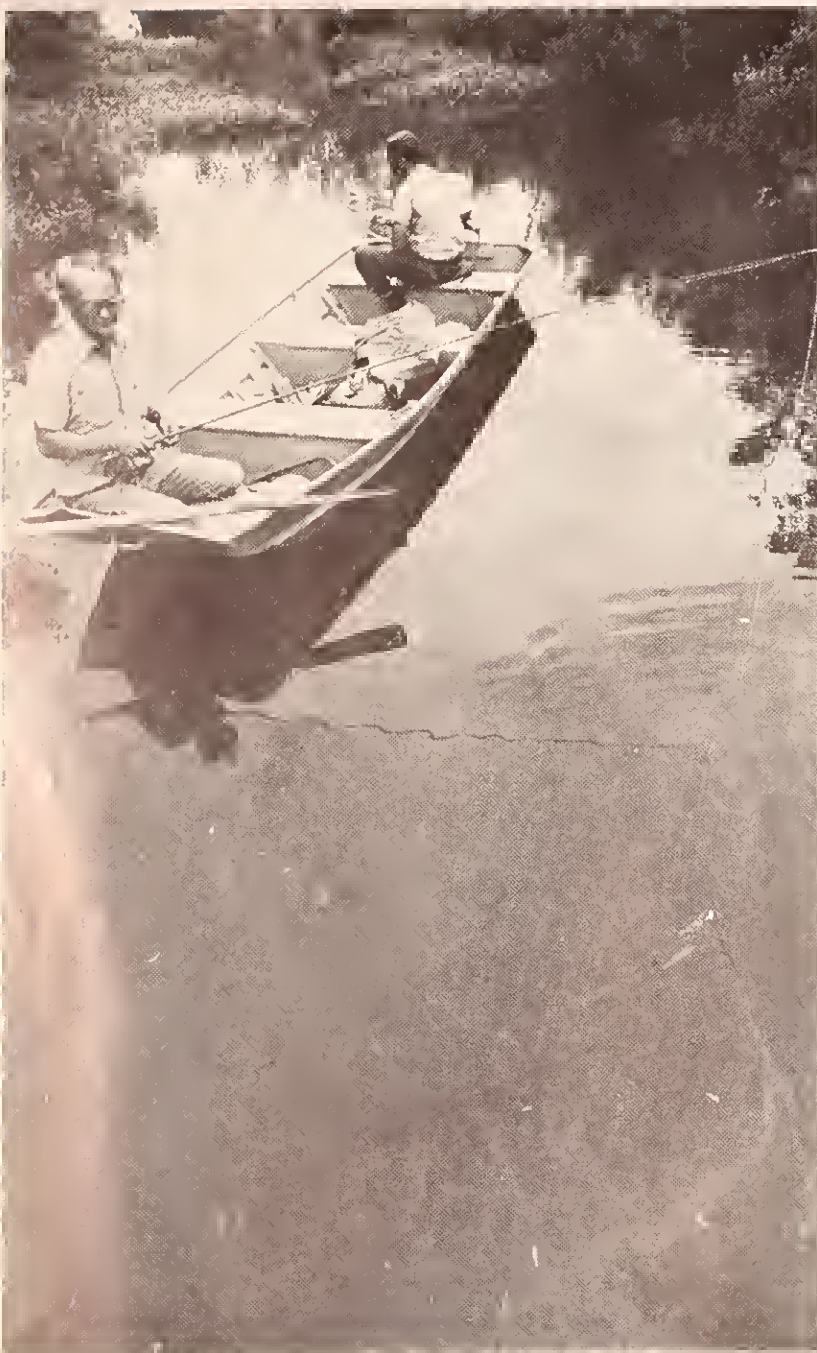
Throughout its life stages, the flea beetle attacks the alligatorweed in different ways. The adults feed on surface leaves; females lay their eggs—1,000 or more—on the undersides of leaves; young larvae then feed on the undersurface of the leaf and, as mature larvae, chew their way into the stems. Larvae develop into adults within the stems, eat their way out, and return to the leaves to start the cycle again. Damage by the beetle and larvae either kills the alligator weed outright, or weakens it, making it vulnerable to disease, competition from other aquatic plants, or wind and wave action.

According to observations thus far, the flea beetle has not been found in significant numbers on any other plants at any time during its life cycle. Insect numbers rise and fall according to the amount of alligatorweed available.

Thankfully, the beetle prefers to feed on the dense, floating mats which clog waterways rather than on rooted alligatorweed plants growing in shallow waters or on moist banks. These rooted plants provide forage for livestock and wildlife and protect stream banks against erosion.



Near Lake Pontchartrain, entomologist Neal R. Spencer, ARS, and aquatic weed expert William E. Thompson, U.S. Army Corps of Engineers, check for egg clusters—an index of beetle population (0474X558-35A). Below, Federal and Louisiana State officials speed along in an airboat on an inspection tour of a waterway that, until the introduction of the flea beetle, was clogged with alligatorweed. The weed will continue to grow at shallow stream banks—a boon to wildlife and livestock (0474X558-13A).



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Fishing camps like this one dot the bayou country (0474X556-35A). However, heavy mats of alligatorweed sometimes deny access. To the trained eye, *Agasicles* beetles are already at work (left, 0474X551-31) promising that the camp will soon again edge open water.

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